

10/534774

JC06 Rec'd PCT/PTO 13 MAY 2005

seq listing.txt

SEQUENCE LISTING

<110> BRETT, Sara
HAMBLIN, Paul A.
OGILVIE, Louise

<120> Vaccine

<130> VB60547

<140> Not Yet Assigned
<141> 2005-05-13

<150> PCT/EP03/12793
<151> 2003-11-13

<150> GB 0226422.7
<151> 2002-11-15

<160> 24

<170> FastSEQ for Windows Version 4.0

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<213> Hepatitis C virus

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<213> Hepatitis C virus

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<212> DNA
<213> Hepatitis C virus

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<213> Hepatitis C virus

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<210> 6
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<213> Hepatitis C virus

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<212> DNA

<213> Hepatitis C virus

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<210> 9

<211> 191

<212> PRT

<213> Hepatitis C virus

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Gly Val Tyr Leu Leu Pro Arg Arg Gly Pro Arg Leu Gly Val Arg Ala
35 40 45

Thr Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg Gln Pro
50 55 60

Ile Pro Lys Ala Arg Arg Pro Glu Gly Arg Ala Trp Ala Gln Pro Gly
65 70 75 80

Tyr Pro Trp Pro Leu Tyr Gly Asn Glu Gly Leu Gly Trp Ala Gly Trp
85 90 95

Leu Leu Ser Pro Arg Gly Ser Arg Pro Ser Trp Gly Pro Thr Asp Pro
100 105 110

Arg Arg Arg Ser Arg Asn Leu Gly Lys Val Ile Asp Thr Leu Thr Cys
115 120 125

Gly Phe Ala Asp Leu Met Gly Tyr Ile Pro Leu Val Gly Ala Pro Leu
130 135 140

Gly Gly Ala Ala Arg Ala Leu Ala His Gly Val Arg Val Leu Glu Asp
145 150 155 160

Gly Val Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile
165 170 175

Phe Leu Leu Ala Leu Leu Ser Cys Leu Thr Ile Pro Ala Ser Ala
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<211> 632

<212> PRT

<213> Hepatitis C virus

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20 25 30

Glu Val Gln Val Val Ser Thr Ala Thr Gln Ser Phe Leu Ala Thr Cys
35 40 45

Ile Asn Gly Val Cys Trp Thr Val Tyr His Gly Ala Gly Ser Lys Thr
50 55 60

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Leu Ala Gly Pro Lys Gly Pro Ile Thr Gln Met Tyr Thr Asn Val Asp
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 Gln Asp Leu Val Gly Trp Gln Ala Pro Pro Gly Ala Arg Ser Met Thr
 85 90 95
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 100 105 110
 Asp Val Ile Pro Val Arg Arg Arg Gly Asp Ser Arg Gly Ser Leu Leu
 115 120 125
 Ser Pro Arg Pro Val Ser Tyr Leu Lys Gly Ser Val Gly Gly Pro Leu
 130 135 140
 Leu Cys Pro Ser Gly His Val Val Gly Ile Phe Arg Ala Ala Val Cys
 145 150 155 160
 Thr Arg Gly Val Ala Lys Ala Val Asp Phe Ile Pro Val Glu Ser Met
 165 170 175
 Glu Thr Thr Met Arg Ser Pro Val Phe Thr Asp Asn Ser Ser Pro Pro
 180 185 190
 Ala Val Pro Gln Thr Phe Gln Val Ala His Leu His Ala Pro Thr Gly
 195 200 205
 Ser Gly Lys Ser Thr Lys Val Pro Ala Ala Tyr Ala Ala Gln Gly Tyr
 210 215 220
 Lys Val Leu Val Leu Asn Pro Ser Val Ala Ala Thr Leu Gly Phe Gly
 225 230 235 240
 Ala Tyr Met Ser Lys Ala His Gly Ile Asp Pro Asn Ile Arg Thr Gly
 245 250 255
 Val Arg Thr Ile Thr Thr Gly Ala Pro Ile Thr Tyr Ser Thr Tyr Gly
 260 265 270
 Lys Phe Leu Ala Asp Gly Gly Cys Ser Gly Gly Ala Tyr Asp Ile Ile
 275 280 285
 Ile Cys Gln Glu Cys His Ser Thr Asp Ser Thr Thr Ile Leu Gly Ile
 290 295 300
 Gly Thr Val Leu Asp Gln Ala Glu Thr Ala Gly Ala Arg Leu Val Val
 305 310 315 320
 Leu Ala Thr Ala Thr Pro Pro Gly Ser Val Thr Val Pro His Pro Asn
 325 330 335
 Ile Glu Glu Val Ala Leu Ser Asn Asn Gly Glu Ile Pro Phe Tyr Gly
 340 345 350
 Lys Ala Ile Pro Ile Glu Ala Ile Lys Gly Gly Arg His Leu Ile Phe
 355 360 365
 Cys His Ser Lys Lys Lys Cys Asp Glu Leu Ala Ala Lys Leu Ser Gly
 370 375 380
 Leu Gly Leu Asn Ala Val Ala Tyr Tyr Arg Gly Leu Asp Val Ser Val
 385 390 395 400
 Ile Pro Thr Ser Gly Asp Val Val Val Val Ala Thr Asp Ala Leu Met
 405 410 415
 Thr Gly Phe Thr Gly Asp Phe Asp Ser Val Ile Asp Cys Asn Thr Cys
 420 425 430
 Val Thr Gln Thr Val Asp Phe Ser Leu Asp Pro Thr Phe Thr Ile Glu
 435 440 445
 Thr Thr Thr Val Pro Gln Asp Ala Val Ser Arg Ser Gln Arg Arg Gly
 450 455 460
 Arg Thr Gly Arg Gly Arg Ser Gly Ile Tyr Arg Phe Val Thr Pro Gly
 465 470 475 480
 Glu Arg Pro Ser Gly Met Phe Asp Ser Ser Val Leu Cys Glu Cys Tyr
 485 490 495
 Asp Ala Gly Cys Ala Trp Tyr Glu Leu Thr Pro Ala Glu Thr Ser Val
 500 505 510
 Arg Leu Arg Ala Tyr Leu Asn Thr Pro Gly Leu Pro Val Cys Gln Asp
 515 520 525
 His Leu Glu Phe Trp Glu Ser Val Phe Thr Gly Leu Thr His Ile Asp
 530 535 540
 Ala His Phe Leu Ser Gln Thr Lys Gln Ala Gly Asp Asn Phe Pro Tyr
 545 550 555 560
 Leu Val Ala Tyr Gln Ala Thr Val Cys Ala Arg Ala Gln Ala Pro Pro
 565 570 575
 Pro Ser Trp Asp Gln Met Trp Lys Cys Leu Ile Arg Leu Lys Pro Thr
 580 585 590
 Leu His Gly Pro Thr Pro Leu Leu Tyr Arg Leu Gly Ala Val Gln Asn
 595 600 605

seq listing.txt

Glu Val Thr Leu Thr His Pro Ile Thr Lys Tyr Ile Met Ala Cys Met
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Ser Ala Asp Leu Glu Val Val Thr
625 630

<210> 11
<211> 214
<212> PRT
<213> Hepatitis C virus

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Met Ala Phe Thr Ala Ser Ile Thr Ser Pro Leu Thr Thr Gln Asn Thr
35 40 45
Leu Leu Phe Asn Ile Leu Gly Gly Trp Val Ala Ala Gln Leu Ala Pro
50 55 60
Pro Ser Ala Ala Ser Ala Phe Val Gly Ala Gly Ile Ala Gly Ala Ala
65 70 75 80
Val Gly Ser Ile Gly Leu Gly Lys Val Leu Val Asp Ile Leu Ala Gly
85 90 95
Tyr Gly Ala Gly Val Ala Gly Ala Leu Val Ala Phe Lys Val Met Ser
100 105 110
Gly Glu Val Pro Ser Thr Glu Asp Leu Val Asn Leu Leu Pro Ala Ile
115 120 125
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130 135 140
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145 150 155 160
Leu Ile Ala Phe Ala Ser Arg Gly Asn His Val Ser Pro Thr His Tyr
165 170 175
Val Pro Glu Ser Asp Ala Ala Ala Arg Val Thr Gln Ile Leu Ser Ser
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Asp Cys Ser Thr Pro Cys
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<210> 12
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<212> PRT
<213> Hepatitis C virus

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35 40 45
Arg Gln Lys Lys Val Thr Phe Asp Arg Leu Gln Val Leu Asp Asp His
50 55 60
Tyr Arg Asp Val Leu Lys Glu Met Lys Ala Lys Ala Ser Thr Val Lys
65 70 75 80
Ala Lys Leu Leu Ser Ile Glu Glu Ala Cys Lys Leu Thr Pro Pro His
85 90 95
Ser Ala Lys Ser Lys Phe Gly Tyr Gly Ala Lys Asp Val Arg Asn Leu
100 105 110
Ser Ser Arg Ala Val Asn His Ile Arg Ser Val Trp Glu Asp Leu Leu
115 120 125
Glu Asp Thr Glu Thr Pro Ile Asp Thr Thr Ile Met Ala Lys Ser Glu
130 135 140
Val Phe Cys Val Gln Pro Glu Lys Gly Gly Arg Lys Pro Ala Arg Leu
145 150 155 160

seq listing.txt

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Tyr	Gln	Cys	Cys	Asp	Leu	Ala	Pro	Glu	Ala	Arg	Gln	Ala	Ile	Arg	Ser
			245					250			255				
Leu	Thr	Glu	Arg	Leu	Tyr	Ile	Gly	Gly	Pro	Leu	Thr	Asn	Ser	Lys	Gly
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Gln	Asn	Cys	Gly	Tyr	Arg	Arg	Cys	Arg	Ala	Ser	Gly	Val	Leu	Thr	Thr
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Ser	Cys	Gly	Asn	Thr	Leu	Thr	Cys	Tyr	Leu	Lys	Ala	Thr	Ala	Ala	Cys
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	305				310				315			320			
Leu	Val	Val	Ile	Cys	Glu	Ser	Ala	Gly	Thr	Gln	Glu	Asp	Ala	Ala	Ala
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Leu	Arg	Ala	Phe	Thr	Glu	Ala	Met	Thr	Arg	Tyr	Ser	Ala	Pro	Pro	Gly
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Tyr	Gly	Ala	Cys	Tyr	Ser	Ile	Glu	Pro	Leu	Asp	Leu	Pro	Gln	Ile	Ile
	450				455				460						
Glu	Arg	Leu	His	Gly	Leu	Ser	Ala	Phe	Ser	Leu	His	Ser	Tyr	Ser	Pro
	465				470				475			480			
Gly	Glu	Ile	Asn	Arg	Val	Ala	Ser	Cys	Leu	Arg	Lys	Leu	Gly	Val	Pro
			485				490			495					
Pro	Leu	Arg	Val	Trp	Arg	His	Arg	Ala	Arg	Ser	Val	Arg	Ala	Lys	Leu
			500				505			510					
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Trp	Ala	Val	Arg	Thr	Lys	Leu	Lys	Leu	Thr	Pro	Ile	Pro	Ala	Ala	Ser
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Gln	Leu	Asp	Leu	Ser	Gly	Trp	Phe	Val	Ala	Gly	Tyr	Ser	Gly	Gly	Asp
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<210> 13

<211> 15

<212> PRT

<213> Hepatitis C virus

<400> 13

Pro Arg Phe Gly Lys Ala Ile Pro Ile Glu Ala Ile Lys Gly Gly
1 5 10 15

<210> 14

<211> 15

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<212> PRT

<213> Hepatitis C virus

<400> 14

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1 5 10 15

<210> 15

<211> 15

<212> PRT

<213> Hepatitis C virus

<400> 15

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<210> 16

<211> 15

<212> PRT

<213> Hepatitis C virus

<400> 16

Ala Ala Ala Leu Arg Ala Phe Thr Glu Ala Met Thr Arg Tyr Ser
1 5 10 15

<210> 17

<211> 15

<212> PRT

<213> Hepatitis C virus

<400> 17

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<210> 18

<211> 15

<212> PRT

<213> Hepatitis C virus

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<210> 19

<211> 9595

<212> DNA

<213> Hepatitis C virus

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seq listing.txt

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<213> Hepatitis C virus

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<212> DNA

<213> Hepatitis C virus

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<210> 23

<211> 1779

<212> DNA

<213> Hepatitis C virus

<400> 23

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 85 90 95
 Leu Leu Ser Pro Arg Gly Ser Arg Pro Ser Trp Gly Pro Thr Asp Pro
 100 105 110
 Arg Arg Arg Ser Arg Asn Leu Gly Lys Val Ile Asp Thr Leu Thr Cys
 115 120 125
 Gly Phe Ala Asp Leu Met Gly Tyr Ile Pro Leu Val Gly Ala Pro Leu
 130 135 140
 Gly Gly Ala Ala Arg Ala Leu Ala His Gly Val Arg Val Leu Glu Asp
 145 150 155 160
 Gly Val Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile
 165 170 175
 Phe Leu Leu Ala Leu Leu Ser Cys Leu Thr Ile Pro Ala Ser Ala Tyr
 180 185 190
 Glu Val Arg Asn Val Ser Gly Ile Tyr His Val Thr Asn Asp Cys Ser
 195 200 205
 Asn Ser Ser Ile Val Tyr Glu Ala Ala Asp Val Ile Met His Thr Pro
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 Gly Cys Val Pro Cys Val Gln Glu Gly Asn Ser Ser Arg Cys Trp Val
 225 230 235 240
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 245 250 255
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 275 280 285
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 290 295 300
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 Asp Met Met Met Asn Trp Ser Pro Thr Thr Ala Leu Val Val Ser Gln
 325 330 335
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 420 425 430
 Leu Gln Thr Gly Phe Phe Ala Ala Leu Phe Tyr Ala His Lys Phe Asn
 435 440 445
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 450 455 460
 Phe Ala Gln Gly Trp Gly Pro Ile Thr Tyr Thr Lys Pro Asn Ser Ser
 465 470 475 480
 Asp Gln Arg Pro Tyr Cys Trp His Tyr Ala Pro Arg Pro Cys Gly Val
 485 490 495
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 1075 1080 1085
 Thr Leu Ala Gly Pro Lys Gly Pro Ile Thr Gln Met Tyr Thr Asn Val
 1090 1095 1100
 Asp Leu Asp Leu Val Gly Trp Gln Ala Pro Pro Gly Ala Arg Ser Met
 1105 1110 1115 1120
 Thr Pro Cys Ser Cys Gly Ser Ser Asp Leu Tyr Leu Val Thr Arg His
 1125 1130 1135

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Ala Asp Val Ile Pro Val Arg Arg Arg Gly Asp Ser Arg Gly Ser Leu
 1140 1145 1150
 Leu Ser Pro Arg Pro Val Ser Tyr Leu Lys Gly Ser Ser Gly Gly Pro
 1155 1160 1165
 Leu Leu Cys Pro Ser Gly His Val Val Gly Val Phe Arg Ala Ala Val
 1170 1175 1180
 Cys Thr Arg Gly Val Ala Lys Ala Val Asp Phe Ile Pro Val Glu Ser
 1185 1190 1195 1200
 Met Glu Thr Thr Met Arg Ser Pro Val Phe Thr Asp Asn Ser Thr Pro
 1205 1210 1215
 Pro Ala Val Pro Gln Thr Phe Gln Val Ala His Leu His Ala Pro Thr
 1220 1225 1230
 Gly Ser Gly Lys Ser Thr Lys Val Pro Ala Ala Tyr Ala Ala Gln Gly
 1235 1240 1245
 Tyr Lys Val Leu Val Leu Asn Pro Ser Val Ala Ala Thr Leu Gly Phe
 1250 1255 1260
 Gly Ala Tyr Met Ser Lys Ala His Gly Ile Asp Pro Asn Ile Arg Thr
 1265 1270 1275 1280
 Gly Val Arg Thr Ile Thr Thr Gly Gly Ser Ile Thr Tyr Ser Thr Tyr
 1285 1290 1295
 Gly Lys Phe Leu Ala Asp Gly Gly Cys Ser Gly Gly Ala Tyr Asp Ile
 1300 1305 1310
 Ile Ile Cys Asp Glu Cys His Ser Thr Asp Ser Thr Thr Ile Leu Gly
 1315 1320 1325
 Ile Gly Thr Val Leu Asp Gln Ala Glu Thr Ala Gly Ala Arg Leu Val
 1330 1335 1340
 Val Leu Ala Thr Ala Thr Pro Pro Gly Ser Val Thr Val Pro His Pro
 1345 1350 1355 1360
 Asn Ile Glu Glu Ile Gly Leu Ser Asn Asn Gly Glu Ile Pro Phe Tyr
 1365 1370 1375
 Gly Lys Ala Ile Pro Ile Glu Ala Ile Lys Gly Gly Arg His Leu Ile
 1380 1385 1390
 Phe Cys His Ser Lys Lys Cys Asp Glu Leu Ala Ala Lys Leu Thr
 1395 1400 1405
 Gly Leu Gly Leu Asn Ala Val Ala Tyr Tyr Arg Gly Leu Asp Val Ser
 1410 1415 1420
 Val Ile Pro Pro Ile Gly Asp Val Val Val Val Ala Thr Asp Ala Leu
 1425 1430 1435 1440
 Met Thr Gly Phe Thr Gly Asp Phe Asp Ser Val Ile Asp Cys Asn Thr
 1445 1450 1455
 Cys Val Thr Gln Thr Val Asp Phe Ser Leu Asp Pro Thr Phe Thr Ile
 1460 1465 1470
 Glu Thr Thr Thr Val Pro Gln Asp Ala Val Ser Arg Ser Gln Arg Arg
 1475 1480 1485
 Gly Arg Thr Gly Arg Gly Arg Ser Gly Ile Tyr Arg Phe Val Thr Pro
 1490 1495 1500
 Gly Glu Arg Pro Ser Gly Met Phe Asp Ser Ser Val Leu Cys Glu Cys
 1505 1510 1515 1520
 Tyr Asp Ala Gly Cys Ala Trp Tyr Glu Leu Thr Pro Ala Glu Thr Ser
 1525 1530 1535
 Val Arg Leu Arg Ala Tyr Leu Asn Thr Pro Gly Leu Pro Val Cys Gln
 1540 1545 1550
 Asp His Leu Glu Phe Trp Glu Ser Val Phe Thr Gly Leu Thr His Ile
 1555 1560 1565
 Asp Ala His Phe Leu Ser Gln Thr Lys Gln Ala Gly Asp Asn Phe Pro
 1570 1575 1580
 Tyr Leu Val Ala Tyr Gln Ala Thr Val Cys Ala Arg Ala Gln Ala Pro
 1585 1590 1595 1600
 Pro Pro Ser Trp Asp Gln Met Trp Lys Cys Leu Ile Arg Leu Lys Pro
 1605 1610 1615
 Thr Leu His Gly Pro Thr Pro Leu Leu Tyr Arg Leu Gly Ala Val Gln
 1620 1625 1630
 Asn Glu Val Ile Leu Thr His Pro Ile Thr Lys Tyr Ile Met Ala Cys
 1635 1640 1645
 Met Ser Ala Asp Leu Glu Val Val Thr Ser Thr Trp Val Leu Val Gly
 1650 1655 1660
 Gly Val Leu Ala Ala Leu Ala Ala Tyr Cys Leu Thr Thr Gly Ser Val
 1665 1670 1675 1680

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val Ile Val Gly Arg Ile Ile Leu Ser Gly Lys Pro Ala Val Val Pro
 1685 1690 1695
 Asp Arg Glu Val Leu Tyr Gln Glu Phe Asp Glu Met Glu Glu Cys Ala
 1700 1705 1710
 Ser Gln Leu Pro Tyr Ile Glu Gln Gly Met Gln Leu Ala Glu Gln Phe
 1715 1720 1725
 Lys Gln Lys Ala Leu Gly Leu Leu Gln Thr Ala Thr Lys Gln Ala Glu
 1730 1735 1740
 Ala Ala Ala Pro Val Val Glu Ser Lys Trp Arg Ala Leu Glu Thr Phe
 1745 1750 1755 1760
 Trp Ala Lys His Met Trp Asn Phe Ile Ser Gly Ile Gln Tyr Leu Ala
 1765 1770 1775
 Gly Leu Ser Thr Leu Pro Gly Asn Pro Ala Ile Ala Ser Leu Met Ala
 1780 1785 1790
 Phe Thr Ala Ser Ile Thr Ser Pro Leu Thr Thr Gln Asn Thr Leu Leu
 1795 1800 1805
 Phe Asn Ile Leu Gly Gly Trp Val Ala Ala Gln Leu Ala Pro Pro Ser
 1810 1815 1820
 Ala Ala Ser Ala Phe Val Gly Ala Gly Ile Ala Gly Ala Ala Val Gly
 1825 1830 1835 1840
 Ser Ile Gly Leu Gly Lys Val Leu Val Asp Ile Leu Ala Gly Tyr Gly
 1845 1850 1855
 Ala Gly Val Ala Gly Ala Leu Val Ala Phe Lys Val Met Ser Gly Glu
 1860 1865 1870
 Val Pro Ser Thr Glu Asp Leu Val Asn Leu Leu Pro Ala Ile Leu Ser
 1875 1880 1885
 Pro Gly Ala Leu Val Val Gly Val Val Cys Ala Ala Ile Leu Arg Arg
 1890 1895 1900
 His Val Gly Pro Gly Glu Gly Ala Val Gln Trp Met Asn Arg Leu Ile
 1905 1910 1915 1920
 Ala Phe Ala Ser Arg Gly Asn His Val Ser Pro Thr His Tyr Val Pro
 1925 1930 1935
 Glu Ser Asp Ala Ala Ala Arg Val Thr Gln Ile Leu Ser Ser Leu Thr
 1940 1945 1950
 Ile Thr Gln Leu Leu Lys Arg Leu His Gln Trp Ile Asn Glu Asp Cys
 1955 1960 1965
 Ser Thr Pro Cys Ser Gly Ser Trp Leu Arg Asp Val Trp Asp Trp Ile
 1970 1975 1980
 Cys Thr Val Leu Thr Asp Phe Lys Thr Trp Leu Gln Ser Lys Leu
 1985 1990 1995 2000
 Pro Arg Leu Pro Gly Val Pro Phe Leu Ser Cys Gln Arg Gly Tyr Lys
 2005 2010 2015
 Gly Val Trp Arg Gly Asp Gly Ile Met Gln Thr Thr Cys Pro Cys Gly
 2020 2025 2030
 Ala Gln Ile Ala Gly His Val Lys Asn Gly Ser Met Arg Ile Val Gly
 2035 2040 2045
 Pro Arg Thr Cys Ser Asn Thr Trp His Gly Thr Phe Pro Ile Asn Ala
 2050 2055 2060
 Tyr Thr Thr Gly Pro Cys Thr Pro Ser Pro Ala Pro Asn Tyr Ser Arg
 2065 2070 2075 2080
 Ala Leu Trp Arg Val Ala Ala Glu Glu Tyr Val Glu Val Thr Arg Val
 2085 2090 2095
 Gly Asp Phe His Tyr Val Thr Gly Met Thr Thr Asp Asn Val Lys Cys
 2100 2105 2110
 Pro Cys Gln Val Pro Ala Pro Glu Phe Phe Thr Glu Val Asp Gly Val
 2115 2120 2125
 Arg Leu His Arg Tyr Ala Pro Ala Cys Lys Pro Leu Leu Arg Glu Asp
 2130 2135 2140
 Val Thr Phe Gln Val Gly Leu Asn Gln Tyr Leu Val Gly Ser Gln Leu
 2145 2150 2155 2160
 Pro Cys Glu Pro Glu Pro Asp Val Thr Val Leu Thr Ser Met Leu Thr
 2165 2170 2175
 Asp Pro Ser His Ile Thr Ala Glu Thr Ala Lys Arg Arg Leu Ala Arg
 2180 2185 2190
 Gly Ser Pro Pro Ser Leu Ala Ser Ser Ser Ala Ser Gln Leu Ser Ala
 2195 2200 2205
 Pro Ser Leu Lys Ala Thr Cys Thr Thr His His Asp Ser Pro Asp Ala
 2210 2215 2220

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Asp Leu Ile Glu Ala Asn Leu Leu Trp Arg Gln Glu Met Gly Gly Asn
 2225 2230 2235 2240
 Ile Thr Arg Val Glu Ser Glu Asn Lys Val Val Ile Leu Asp Ser Phe
 2245 2250 2255
 Glu Pro Leu His Ala Glu Gly Asp Glu Arg Glu Ile Ser Val Ala Ala
 2260 2265 2270
 Glu Ile Leu Arg Lys Ser Arg Lys Phe Pro Ser Ala Leu Pro Ile Trp
 2275 2280 2285
 Ala Arg Pro Asp Tyr Asn Pro Pro Leu Leu Glu Ser Trp Lys Asp Pro
 2290 2295 2300
 Asp Tyr Val Pro Pro Val Val His Gly Cys Pro Leu Pro Pro Thr Lys
 2305 2310 2315 2320
 Ala Pro Pro Ile Pro Pro Arg Arg Lys Arg Thr Val Val Leu Thr
 2325 2330 2335
 Glu Ser Asn Val Ser Ser Ala Leu Ala Glu Leu Ala Thr Lys Thr Phe
 2340 2345 2350
 Gly Ser Ser Gly Ser Ser Ala Val Asp Ser Gly Thr Ala Thr Ala Leu
 2355 2360 2365
 Pro Asp Leu Ala Ser Asp Asp Gly Asp Lys Gly Ser Asp Val Glu Ser
 2370 2375 2380
 Tyr Ser Ser Met Pro Pro Leu Glu Gly Glu Pro Gly Asp Pro Asp Leu
 2385 2390 2395 2400
 Ser Asp Gly Ser Trp Ser Thr Val Ser Glu Glu Ala Ser Glu Asp Val
 2405 2410 2415
 Val Cys Cys Ser Met Ser Tyr Thr Trp Thr Gly Ala Leu Ile Thr Pro
 2420 2425 2430
 Cys Ala Ala Glu Glu Ser Lys Leu Pro Ile Asn Pro Leu Ser Asn Ser
 2435 2440 2445
 Leu Leu Arg His His Asn Met Val Tyr Ala Thr Thr Ser Arg Ser Ala
 2450 2455 2460
 Ser Leu Arg Gln Lys Lys Val Thr Phe Asp Arg Leu Gln Val Leu Asp
 2465 2470 2475 2480
 Asp His Tyr Arg Asp Val Leu Lys Glu Met Lys Ala Lys Ala Ser Thr
 2485 2490 2495
 Val Lys Ala Lys Leu Leu Ser Ile Glu Glu Ala Cys Lys Leu Thr Pro
 2500 2505 2510
 Pro His Ser Ala Lys Ser Lys Phe Gly Tyr Gly Ala Lys Asp Val Arg
 2515 2520 2525
 Asn Leu Ser Ser Arg Ala Val Asn His Ile Arg Ser Val Trp Glu Asp
 2530 2535 2540
 Leu Leu Glu Asp Thr Glu Thr Pro Ile Asp Thr Thr Ile Met Ala Lys
 2545 2550 2555 2560
 Ser Glu Val Phe Cys Val Gln Pro Glu Lys Gly Gly Arg Lys Pro Ala
 2565 2570 2575
 Arg Leu Ile Val Phe Pro Asp Leu Gly Val Arg Val Cys Glu Lys Met
 2580 2585 2590
 Ala Leu Tyr Asp Val Val Ser Thr Leu Pro Gln Ala Val Met Gly Ser
 2595 2600 2605
 Ser Tyr Gly Phe Gln Tyr Ser Pro Lys Gln Arg Val Glu Phe Leu Val
 2610 2615 2620
 Asn Thr Trp Lys Ser Lys Lys Cys Pro Met Gly Phe Ser Tyr Asp Thr
 2625 2630 2635 2640
 Arg Cys Phe Asp Ser Thr Val Thr Glu Ser Asp Ile Arg Val Glu Glu
 2645 2650 2655
 Ser Ile Tyr Gln Cys Cys Asp Leu Ala Pro Glu Ala Arg Gln Ala Ile
 2660 2665 2670
 Arg Ser Leu Thr Glu Arg Leu Tyr Ile Gly Gly Pro Leu Thr Asn Ser
 2675 2680 2685
 Lys Gly Gln Asn Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Leu
 2690 2695 2700
 Thr Thr Ser Cys Gly Asn Thr Leu Thr Cys Tyr Leu Lys Ala Thr Ala
 2705 2710 2715 2720
 Ala Cys Arg Ala Ala Lys Leu Gln Asp Cys Thr Met Leu Val Asn Gly
 2725 2730 2735
 Asp Asp Leu Val Val Ile Cys Glu Ser Ala Gly Thr Gln Glu Asp Ala
 2740 2745 2750
 Ala Ala Leu Arg Ala Phe Thr Glu Ala Met Thr Arg Tyr Ser Ala Pro
 2755 2760 2765

seq listing.txt

Pro Gly Asp Pro Pro Gln Pro Glu Tyr Asp Leu Glu Leu Ile Thr Ser
2770 2775 2780
Cys Ser Ser Asn Val Ser Val Ala His Asp Ala Ser Gly Lys Arg Val
2785 2790 2795 2800
Tyr Tyr Leu Thr Arg Asp Pro Thr Thr Pro Leu Ala Arg Ala Ala Trp
2805 2810 2815
Glu Thr Ala Arg His Thr Pro Ile Asn Ser Trp Leu Gly Asn Ile Ile
2820 2825 2830
Met Tyr Ala Pro Thr Leu Trp Ala Arg Met Ile Leu Met Thr His Phe
2835 2840 2845
Phe Ser Ile Leu Leu Ala Gln Glu Gln Leu Glu Lys Ala Leu Asp Cys
2850 2855 2860
Gln Ile Tyr Gly Ala Cys Tyr Ser Ile Glu Pro Leu Asp Leu Pro Gln
2865 2870 2875 2880
Ile Ile Glu Arg Leu His Gly Leu Ser Ala Phe Thr Leu His Ser Tyr
2885 2890 2895
Ser Pro Gly Glu Ile Asn Arg Val Ala Ser Cys Leu Arg Lys Leu Gly
2900 2905 2910
Val Pro Pro Leu Arg Thr Trp Arg His Arg Ala Arg Ser Val Arg Ala
2915 2920 2925
Lys Leu Leu Ser Gln Gly Gly Arg Ala Ala Thr Cys Gly Arg Tyr Leu
2930 2935 2940
Phe Asn Trp Ala Val Arg Thr Lys Leu Lys Leu Thr Pro Ile Pro Ala
2945 2950 2955 2960
Ala Ser Gln Leu Asp Leu Ser Gly Trp Phe Val Ala Gly Tyr Ser Gly
2965 2970 2975
Gly Asp Ile Tyr His Ser Leu Ser Arg Ala Arg Pro Arg Trp Phe Pro
2980 2985 2990
Leu Cys Leu Leu Leu Ser Val Gly Val Gly Ile Tyr Leu Leu Pro
2995 3000 3005
Asn Arg
3010